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(54) Fanned trailing edge teardrop array

(57) A component for use in a gas turbine engine is provided. The component has an airfoil portion with a plurality of internal cooling passages and a non-linear trailing edge. The component further has a non-linear array of teardrop shaped assemblies which form a plurality of injection slots for injecting a coolant fluid into a fluid passing over the airfoil portion. The teardrop shaped assemblies are designed to maximize thermal performance of the component by reducing a relative diffusion angle between the injected coolant flow and the streamline direction of the fluid passing over the airfoil portion.

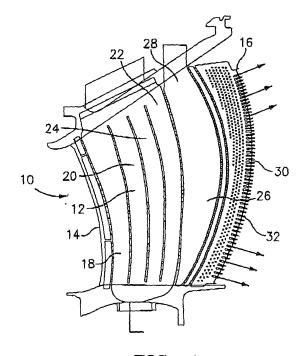


FIG. 1

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EUROPEAN SEARCH REPORT

Application Number EP 05 25 0085

O-4	Citation of document with ir	ndication, where appropriate,	TΒ	elevant	CLAS	SIFICATION OF THE
Category	of relevant passa			claim		ICATION (IPC)
Х	AL) 2 April 1996 (1	ELMI GREGORY J [US] ET 996-04-02) - column 4, line 53;	1,	13	INV. F01D	5/18
Х	US 6 164 913 A (RED 26 December 2000 (2 * column 1, lines 3 * column 2, line 55 * column 5, lines 1	000-12-26) 9-46 * 5 - column 4, line 5 *	1,	11-13		
E,X	[US]) 8 June 2005 (TED TECHNOLOGIES CORP 2005-06-08) - [0004], [0012];	1-:	3, -13		
P,X, L	[US]) 4 August 2004	TED TECHNOLOGIES CORP (2004-08-04) , [0011]; figure 2 *	1,	13		
Х	WO 01/31171 A (PRAT		1,	11-13		HNICAL FIELDS
Α	[CA]) 3 May 2001 (2 * page 6, lines 6-1		5,	7,8	F01D	
А	[US]) 23 June 1999	TED TECHNOLOGIES CORP (1999-06-23) , [0018] - [0020];	2-4	4, -13		
А	US 5 288 207 A (LIN 22 February 1994 (1 * column 2, lines 3 * column 4, line 31 figure 4 *	 ASK INDRIK [US]) 994-02-22) 5-49 * - column 5, line 60; 		6,7, -13		
	The present search report has I	peen drawn up for all claims	1			
	Place of search	Date of completion of the search	1		Exam	iner
	The Hague	14 October 2008		Sou	ris.	Christophe
C.	ATEGORY OF CITED DOCUMENTS	T : theory or principle	e unde			
X : part Y : part docu	icularly relevant if taken alone cularly relevant if combined with anotl ment of the same category nological background	E : earlier patent do after the filing dat	oumente e n the a or othe	t, but publis application er reasons	hed on, o	

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 05 25 0085

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

14-10-2008

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 5503529	A	02-04-1996	DE DE EP	69507782 69507782 0716217	T2	25-03-1 02-09-1 12-06-1
US 6164913	A	26-12-2000	BR CA DE DE EP JP		A1 D1 T2 A1	13-03-2 26-01-2 19-05-2 26-01-2 31-01-2 27-02-2
EP 1538305	A	08-06-2005	CA CN JP JP KR SG US	2481351 1619108 4057573 2005147131 20050048461 112010 2005106007	A B2 A A A1	19-05-2 25-05-2 05-03-2 09-06-2 24-05-2 29-06-2 19-05-2
EP 1443178	Α	04-08-2004	CN CN JP JP KR US	1519458 1963156 3954034 2004232634 20040070072 2004151586	A B2 A A	11-08-2 16-05-2 08-08-2 19-08-2 06-08-2
WO 0131171	Α	03-05-2001	CA CZ DE DE DE EP JP US	1222366	A3 D1 T2 A1 T	03-05-2 16-10-2 03-02-2 25-05-2 17-07-2 08-04-2 10-07-2
EP 0924385	Α	23-06-1999	DE DE JP US	69822100 69822100 11247608 6139269	T2 A	08-04-2 22-07-2 14-09-1 31-10-2
US 5288207	Α	22-02-1994	DE DE DE EP JP JP	774046 0774046 3335354	T2 T1 A1 B2 T	20-05-1 18-11-1 28-08-1 21-05-1 15-10-2 16-04-1 09-06-1